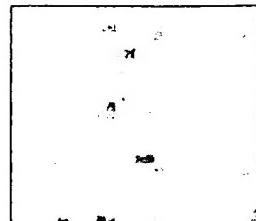
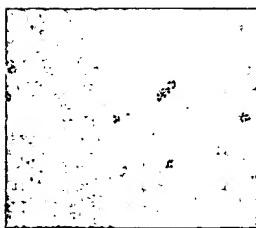


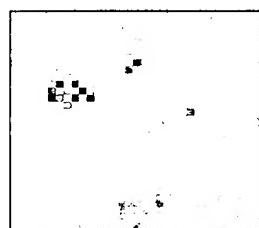
(1) electroplated Cu/  
sputtered Cu/  
sputtered Ru/  
SiO<sub>2</sub> insulator



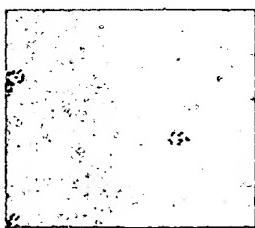
(5) electroplated Cu/  
sputtered Cu/  
sputtered Ru/  
Si substrate



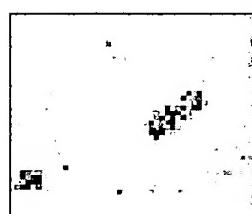
(2) electroplated Cu/  
sputtered Ru/  
SiO<sub>2</sub> insulator



(6) electroplated Cu/  
sputtered Ru/  
Si substrate



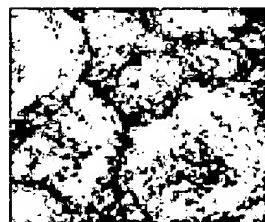
(3) electroplated Cu/  
sputtered Cu/  
electroplated Ru/  
SiO<sub>2</sub> insulator



(7) electroplated Cu/  
sputtered Cu/  
electroplated Ru/  
Si substrate



(4) electroplated Cu/  
electroplated Ru/  
 $\text{SiO}_2$  insulator



(8) electroplated Cu/  
electroplated Ru/  
Si substrate

A circular stamp with the word "OIPE" at the top, "JC98" at the bottom right, and "SEP 18 2002" in the center. The bottom half of the circle contains the text "TRADEMARK OFFICE".

The surface roughness increases in the following order:  
(1)<(2)<(3)<(5)<(6)<(7)<(4)<(8)

## **SKETCH**